SECTION 07900
JOINT SEALERS

PART ONE - GENERAL

1.1 SUMMARY

A. This Section Includes:
   1. Installation of sealants, backing rods, and bond breaker tape at sealant joints at the Rotunda Colonnade Dado, Consoles, and Base Wash.

B. Scope: Provide all materials, labor, equipment, and appliances required to complete work of this Section, including, but not necessarily limited to, the following:
   1. Removal of existing joint sealers.
   2. Cleaning and priming of joints as required by Manufacturers installation instructions.
   3. Installation of joint sealants at intersections between consoles and wash and consoles and colonnade dado.

C. Related Work: The following work of similar nature is specified in other sections:

   1. Section 09960 High Performance Coatings.

1.2 REFERENCES

A. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
B. ASTM C510 – Standard Test Method for Staining and Color Change of Single – or Multicomponent Joint Sealants.
C. ASTM C 616 – Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer
D. ASTM C 679 – Standard Test Method for Tack-Free Time of Elastomeric Sealants
E. ASTM C 719 – Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)
F. ASTM C 793 – Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants Elastomeric Joint Sealants After Cure.
G. ASTM C 794 – Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
H. ASTM C 793 – Standard Test Method for Effects of Heat Aging on Weight loss, Cracking, and Curing of
I. FS (Federal Specification) TT-S-00227E Class A, Type II - Federal Specification for Sealing Compound: Elastomeric Type, Multi-Component (for Caulking, Sealing, and Glazing in Buildings and Other Structures.

1.3 QUALITY ASSURANCE

A. Performance: Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.
B. Applicator Qualifications: Contractor and job foreman must have a minimum of five (5) years experience installing sealant.
C. Pre-Installation Compatibility and Adhesion Tests: Contractor shall be responsible for verifying with sealant manufacturer that all sealants to be used are compatible with and will satisfactorily adhere to all substrates. Tests shall be conducted in the field and witnessed by the Architect or Inspection Agency.
D. Adhesion Test: During installation, in the presence of, and when and where directed by the Architect or Inspection Agency, conduct pull test on each joint type. Test is to be performed by slicing across the joint and then cutting both sides of the joint two inches, separating the sealant from the adjoining material. The sealant

shall then be pulled in the direction of the joint. The sealant should break rather than separate from the adjoining material.

1.4 SUBMITTALS

A. Submit under provisions of Division 1.
B. Manufacturer's Technical Data, Guides, and Application Procedures
C. Submit samples illustrating colors.
D. Submit laboratory tests or data validating product compliance with performance criteria specified.
E. Submit a copy of the Manufacturer's warranty.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.
B. Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight in strict accordance with manufacturer's recommendations.
C. Condition products to approximately 60 to 70 degrees F (16 to 21 degrees C) for use in accordance with manufacturer's recommendations.
D. Handle all products with appropriate precautions and care as stated on Material Safety Data Sheet.

1.6 PROJECT CONDITIONS

A. Do not use products under conditions of precipitation or freezing weather. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions in accordance with manufacturer's recommendations if application during inclement weather occurs.
B. Ensure substrate is dry.
C. Protect adjacent work from contamination or damage.

1.7 WARRANTY

A. Provide manufacturer's twenty-year limited warranty against failure of structural adhesion, staining, and weatherseal.

PART TWO - PRODUCTS

2.1 MANUFACTURERS

A. Single Source: All materials, including joint sealers, cleaners, and primers shall be of a single source manufacturer.

B. Acceptable Manufacturers:
   1. Dow Corning
   2. Sika
   3. Tremco
   4. Approved Equal

2.2 MATERIALS

A. One-part, low modulus, elastomeric sealant: *DOW CORNING* 790 Silicone Building Sealant, *SIKA* Sikasil 990 or *TREMCO* Spectrem 1, Conforming to ASTM C920, Type S, Grade 25, Use NT, M, G, A, and O.

2.3 ACCESSORIES

A. Primer: As required by sealant manufacturer.
B. Joint Cleaner: Non-corrosive and non-staining type recommended by sealant manufacturer and compatible with joint forming materials.
C. Backer Rod: closed-cell polyethylene rod designed for use with cold-applied joint sealants for on-grade or below-grade applications.
    1. Comply with ASTM C 1330.
    2. Size required for joint design.

D. Bond Breaker: Pressure-sensitive tape polyethylene or Teflon recommended by sealant manufacturer.
E. Masking Tape: Pressure-sensitive paper tape.

2.4 COLOR

A. Sealant Colors: Selected by Architect to match roof coating.

PART THREE - EXECUTION

3.1 EXAMINATION

A. Inspect all areas involved in work to establish extent of work, access, and need for protection of surrounding construction and public spaces.
B. Conduct pre-application inspection of site verification with an authorized manufacturer's representative.
C. The drawings generally indicate locations of joint sealers. The contractor shall examine the building prior to bidding to determine the quantity and location of all sealant joints.

3.2 PREPARATION

A. Do not install sealants when temperatures are below 40 degrees F. or predicted to fall below 40 during the first 24 hours after installation. Surface to receive sealants must also be above 40 degree F.
B. Remove loose materials and foreign matter which impair adhesion of joint filler.
C. Clean joints by grinding, sandblasting, or wire brushing to expose a sound surface free of contamination and laitance.
D. Ensure structurally sound surfaces, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and parting compounds, membrane materials, and other foreign matter.
E. Prime the bond line using Prime Coat where required by the sealant manufacturer installation instructions or as required for proper adhesion, allowing a minimum of one hour drying and cure time before installing sealant. Primer should be within shelf life and poured from containers onto rags, or into applicator bottles that can be poured onto rags. If brushes are used, primer should be poured a small amount at a time into another open container to avoid contaminating primer and to minimize primer being exposed too long. Pour out no more than can be applied in 30 minutes. If primer becomes cloudy or contaminated, discard. Prime no more substrate than can be sealed in one day or shift.
F. Where the possibility of joint filler staining of adjacent areas or materials exists, mask joints prior to application.
    1. Do not remove masking tape before joints have been tooled and initial cure of joint filler has taken place.
    2. Work stained due to failure of proper masking precautions will not be accepted.

3.3 INSTALLATION

A. Solvent clean aluminum and any other non-porous surfaces with recommended solvent using the “Two Cloth Cleaning Method”.

B. Apply primer according to manufacturer's instructions.
C. Back-Up Material:
    1. Install backer rod using blunt or rounded tools to assure uniform depth (+/- 1/8") without puncturing or twisting. Closed cell rod shall be a minimum 20% oversized. Open cell rod shall be a minimum 50% oversized. Install bond breaker tape in shallow joints.
    2. Install polyethylene joint filler in joints wider than 1/4 inch (6 mm) to back-up material per manufacturer's recommendations.

D. Bond Breaker: Install bond-breaker strip in joint to be sealed on top of back-up material to prevent adhesion of sealant to back-up material; install per manufacturer's recommendations.
E. Sealant:
    1. Mask or protect adjacent areas that are not to receive sealant.
    2. Apply sealant in joints using a pressure gun with nozzle cut to appropriate size. Deposit sealant in a uniform and continuous bead with no gaps or air pockets.
    3. Tool joints to require configuration with a blunt instrument as soon as possible after installation, but before sealant begins to skin over. Remove all masking materials immediately after tooling.
    4. Apply materials only within manufacturer's specified application life period. Discard sealant after application life is expired or if prescribed application period has elapsed.

F. Joints shall have a minimum width to depth ratio of 2:1. Finished joint cross section shall have an hourglass shape.

3.5 CLEANING

A. Remove uncured sealant and joint filler with Reducer, xylene, toluene, or MEK. Remove cured sealant and joint filler by razor, scraping, or mechanically.
B. Remove all debris related to application of sealants from job site in accordance with all applicable regulations for hazardous waste disposal.

END OF SECTION